**REMARKS**

**Status of the Claims**

- Claims 1-9, 15, and 18 are pending in the Application after entry of this amendment.
- Claims 1-9, 15, and 18 are rejected by Examiner.
- Claim 7 is amended to correct punctuation.

**Claim Rejections Pursuant to 35 U.S.C. §103**

Claims 1-3, 5-9, and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Admitted Prior Art in view of U.S. Patent No. 7,099,697 to Okawa et al. (Okawa) in view of U.S. Patent No. 6,941,152 to Proctor, Jr. et al. (Proctor). Applicant respectfully traverses the rejection.

Pending Claim 1 recites:

> 1. A method of communication in transmitting/receiving stations in a wireless communication network, in which multi-receiver frames are exchanged between a station and a plurality of other stations indicating the transmitting station and the receiving station in an omnidirectional manner using omnidirectional antennas at the transmitting station and at the receiving station and mono-receiver frames are exchanged between the transmitting station and the receiving station, *in a directional manner using directional antennas at the transmitting station and at the receiving station*, wherein the transmission in an omnidirectional manner is effected in a more robust fashion than the transmission in a directional manner using a directional antenna.

Claim 1 recites the aspect that "mono-receiver frames are exchanged…*in a directional manner using directional antennas at the transmitting station and at the receiving station"*. Applicant respectfully submits

that the above emphasized element is not present in the cited admitted prior art, Okawa, or Proctor, or the combination of admitted prior art, Okawa, and Proctor. Further, the combination of specific combination of frame types and antenna types indicated in independent Claims 1 and 9 are not disclosed in the combination of Admitted prior art, Okawa, and Proctor.

Page 10 of the present Office Action dated 4/12/10 states:

> "Further, admitted prior art teaches the RTS and CTS frames are multi-receiver frames that have to be receied by all stations (using omni-directional antennas) of the network that ate liable to communicate with the two stations, while DATA and ACK frames are mono-receiver frames that have only to be received by the two stations that are communicating (using directional antennas which is inherent)."

Applicant respectfully disagrees that that the use of directional antennas is inherent in the admitted prior art of the present application.

As indicated in MPEP §2112 Part IV, "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is *necessarily present* in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Additionally, MPEP §2112 Part IV indicates that "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily flows from the teachings of the applied prior art*." (See MPEP §2112 Part IV)

The admitted prior art cited is from the as-filed specification on Page 2 lines 5-27. Page 2 lines 1-27 state:

> "The mechanism of basic access between the stations, called "DCF" ("Distributed Coordination Function") follows the "CSMA/CA" protocol ("Carrier Sense Multiple Access with Collision Avoidance") described hereinbelow, so as to avoid collisions between frames:

- A first station wishing to dispatch data to a second station sends an RTS frame to all the stations located in its transmission field to reserve their communication medium for a certain duration while indicating the source, the destination and the duration of the transaction.

- The second station responds, if the medium is free, to all the stations in its transmission field to signal its acceptance of the transfer of data with a CTS frame, containing the same information as the RTS frame.

- All the stations, other than the two stations that are communicating, having received at least one of the RTS or CTS frames set up, on the basis of the information received, a "NAV" ("Network Allocation Vector"), that is to say a period during which they stop all activity so as not to disturb the transfer of data.

- After receipt of the CTS frame, the first station dispatches the data to be transferred to the second station in one or more DATA frames.

- The second station receives the data and dispatches an ACK frame to the first station to signal the correct receipt of the data.

The RTS and CTS frames are multi-receiver frames that have to be received by all the stations of the network that are liable to communicate with the two stations, while the DATA and ACK frames are mono-receiver frames that have only to be received by the two stations that are communicating.

Currently, in a wireless communication network, each station of the network makes use of omnidirectional antennas for dispatching all the types of frames indicated above." (Page 2, lines 1-27 of present Specification)

Applicant respectfully notes that the above recitation of the cited admitted prior art from Applicant's specification is absent any mention of a

directional antenna on a station. In actuality, the above cited admitted prior art only describes the use of "onmindirectional antennas" for dispatching all the types of frames indicated above. As such, Applicant is confident that one of skill in the art would not read the above-recited admitted prior art to include directional antennas because the term directional antenna is absent in the passages of the admitted prior art section. Also, the description of the onmindirectional antennas in the admitted prior art is specific to describe onmidirectional antennas as useful for dispatching all of the types of frames that were discussed. This is in contrast to the pending Claims which separate out antenna types and frame types unlike the cited art.

Applicant thus concludes that one of skill in the art would not find that the use of directional antennas on station receivers is necessarily present or necessarily flows from the teachings of the applied prior art as is required by inherency from MPEP §212 Part IV.

In addition, the present Office Action fails to provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic of the use of directional antennas on receiver stations necessarily flows from the teachings of Applicants' Admitted Prior Art as required by MPEP §212 Part IV.

Accordingly, Applicant finds no support that Applicant's Admitted Prior art discloses the Claim 1 element of:

> "mono-receiver frames are exchanged between the transmitting station and the receiving station when operating in a directional manner using directional antennas at the transmitting station and at the receiving station"

because Applicant's admitted prior art is absent a description of the use of directional antennas.

Considering Okawa, Applicant also finds no disclosure of directional antennas on receiving stations as recited in pending Claim 1.

Okawa is specific in describing a directional and onmidirectional antenna types. Okawa Fig. 4 and in col. 5 lines 31-45 describes a base station 10 has having an antenna array 11a1-11a3 that are directional antennas. The base station 10 also has sector antennas 11b1-11b3 that are onmidirectional antennas.

Column 3 lines 26-38 indicates the function of the Okawa base station is to transmit an onmidirectional beam or a directional beam to the mobile station depending on whether the mobile station is cable of receiving the directional beam.

Okawa states that it is the antenna controller 14 that determines whether or not the mobile stations are capable of receiving directional beams. Okawa then develops his own lexicon to define a "directional beam capable mobile station" as a mobile station that is capable of receiving a directional beam. Okawa at col. 6, lines 42-56 states:

> "The antenna weight controller 14 is an antenna controller, which determines whether or not the mobile stations 30 are capable of receiving a directional beam, and selects the array antenna 11a as an antenna to be used for transmitting individual data in the case where they are capable of receiving a directional beam, or selects the sector antenna 11b as an antenna for transmitting individual data in the case where they are incapable of receiving a directional beam. Hereafter, the mobile station that is capable of receiving a directional beam is referred to as `a directional beam-capable mobile station`. In addition, the mobile station that is incapable of receiving a directional beam is referred to as `a directional beam-incapable mobile station`. There are two types of mobile station: the directional beam-capable mobile station and the directional beam-incapable mobile station." (Okawa, col. 3 lines 42-56).

Okawa then goes on to describe how the antenna controller 14 makes its decision on which mobile station is "directional beam capable" (i.e. can

receive directional beams) based on the location of the mobile station in a particular sector.

Okawa at col. 6 line 66 through col. 7 line 25 states:

"Meanwhile, when the transmitted-data 2 is individual data transmitted through the downlink dedicated channel, the antenna weight controller 14 determines whether the mobile station 30, which is the transmitted-data 2 destination, is a directional beam-capable mobile station or a directional beam-incapable mobile station by referring to the mobile station information storage unit 14a.

The mobile station information storage unit 14a stores mobile station information relating to each mobile station 30 that exists within a sector, and connects a radio link with the base station 10. Mobile station information includes the type of mobile station. In other words, the mobile station information unit 14a stores whether the mobile station 30 connecting a radio link with the base station 10 is a directional beam-capable mobile station or a directional beam-incapable mobile station. The mobile station information storage unit 14 stores mobile station information associating with mobile station identification data, which distinguishes the mobile station 30.

Therefore, the antenna weight controller 14 refers to the mobile station information storage unit 14a based on the mobile station identification data of the mobile station 30, which is an individual data destination, and determines whether that mobile station 30 is a directional beam-capable mobile station or a directional beam-incapable mobile station. The antenna weight controller 14 then selects the array antenna 11a as an antenna to be used…" (Okawa, col. 6 line 66 - col. 7 line 25).

Thus, Applicant concludes that one of skill in the art would realize that Okawa stores in information storage unit 14 information concerning the location

of mobile unit by storing the current sector information that is indicative of the location of the mobile unit. This is indicative of whether a mobile unit is capable of receiving a directional transmission from the base station based on which sector the mobile unit is located and the ability of the base station directional antenna array to point a beam in the location of the mobile unit.

Applicant concludes that Okawa does not disclose anything about the antenna type of the mobile station. Thus, Okawa is silent concerning whether a mobile device has a directional antenna. Thus, Applicant concludes that one of skill in the art would not find that Okawa discloses the Claim 1 aspect of: "… the transmitting station and the receiving station operate in an omnidirectional manner using omnidirectional antennas at the transmitting station and at the receiving station, and mono-receiver frames are exchanged between the transmitting station and the receiving station when operating in a directional manner using directional antennas at the transmitting station and at the receiving station…" as indicated in Claims 1 and 9 because Okawa fails to explicitly disclose a directional antenna at the receiving station associated with a frame type.

Proctor discusses in col. 4 lines 59 through col. 5 line 3 that the mobile users (14a) only have omnidirectional antennas. (See Proctor, Figure 4C, item 14a). Proctor discusses in col. 5 lines 16-20 that the fixed users (14b) have directional antennas. (See Proctor, Figure 4C, item 14b). Proctor achieves minimum interference by applying constraints to power output and throughput via the base station processor 16.

Proctor, like Okawa and Applicants' Admitted prior art fails to discuss the use of omnidirectional antenna by both the transmitting station and the receiving station when exchanging multi-receiver frames in an omnidirectional manner and the use of directional antennas by both the transmitting station and the receiving station when exchanging mono-receiver frames in a directional manner as in pending independent Claims 1 and 9.

Applicant respectfully submits that pending independent Claims 1 and 9 are thus not rendered obvious under 35 USC §103(a) per MPEP §2143 because all elements of the pending claims are not found in the cited art. Also, Claims 2-3, 5-9 and 18 are also not rendered obvious per MPEP §2143.03 because they depend on non-obvious independent Claims 1 and 9. Applicant respectfully requests reconsideration of the 35 U.S.C. §103(a) rejection of pending Claims 1-3, 5-9 and 18 based on the remarks above.

**Claim Rejections Pursuant to 35 U.S.C. §103**

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Admitted Prior Art in view of U.S. Patent No. 7,099,697 to Okawa et al. (Okawa) in view of U.S. Patent No. 6,941,152 to Proctor, Jr. et al. (Proctor) and in further view of U.S. Patent No. 6,132,306 to Trompower. Applicant respectfully traverses the rejection.

The teachings of Admitted Prior Art, Okawa, and Proctor are discussed above.

Trompower discusses a cellular telephone communications system with dedicated repeater channels that are located in the base stations. The discussion of Trompower discuses how the contention areas formed by overlapping cells is effectively eliminated. (See Trompower, Abstract).

However, Trompower, like Okawa and Proctor, fails to discuss that multi-receiver frames are exchanged between a station and a plurality of other stations using omnidirectional antennas at the transmitting station and at the receiving station and mono-receiver frames are exchanged using directional antennas at the transmitting and receiving stations as is recited in pending independent Claim 1 upon which Claim 4 depends.

Since independent Claim 1 is not rendered obvious by the combination of Admitted Prior Art, Okawa, Proctor, and Trompower because all elements of independent Claim 1 are not taught or suggested by the combination, then dependent Claim 4 is likewise rendered non obvious under 35 U.S.C §103(a) per MPEP §2143.03. Applicant respectfully requests reconsideration of the 35 U.S.C. §103(a) rejection of pending Claim 4.

**Claim Rejections Pursuant to 35 U.S.C. §103**

Claim 15 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Admitted Prior Art in view of U.S. Patent No. 7,099,697 to Okawa et al. (Okawa) in view of U.S. Patent No. 6,941,152 to Proctor, Jr. et al. (Proctor) and in further view of U.S. Patent No. 7,092,672 to Pekonen et al. (Pekonen). Applicant respectfully traverses the rejection.

The teachings of Admitted Prior Art, Okawa, and Proctor are discussed above.

Pekonen discusses the reporting of cell measurement results in a cellular communication system. The cell measurements are performed by the transceiver station for getting cell measurement results associated with a number of the cells. Relevant cell measurement results are then selected and the selected results are transmitted in the defined reporting order. (See Pekonen, Abstract).

However, Pekonen, like Okawa, and Proctor, fails to discuss that multi-receiver frames are exchanged between a station and a plurality of other stations using omnidirectional antennas at the transmitting station and at the receiving stations and mono-receiver frames are exchanged using directional antennas of the receiver and transmitter stations as recited in pending independent Claim 9 upon which Claim 15 depends.

Since independent Claim 9 is not rendered obvious by the combination of Admitted Prior Art, Okawa, Proctor, and Pekonen because all elements of independent Claim 9 are not taught or suggested by the combination, then dependent Claim 15 is likewise rendered non obvious under 35 U.S.C §103(a) per MPEP §2143.03. Applicant respectfully requests reconsideration of the 35 U.S.C. §103(a) rejection of pending Claim 15.

**Conclusion**

Applicant respectfully submits that the pending claims patentably define over the cited art and respectfully requests continued examination, reconsideration, and withdrawal of the rejections of all pending claims based on the arguments presented herein.

Applicant respectfully requests that the Examiner reconsider all of the claim elements of the pending claims including the claimed association between types of frames and antenna types as highlighted in the arguments above.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 07-0832 therefore.

Respectfully submitted,
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